

CLAIMS

The invention claimed is:

1. A outdoor fan system, comprising:

an upper housing designed to be connected to a camouflaging lid;

a lower housing removably connected to the lower housing and designed to be inserted into the ground;

a filter assembly connected between the upper and lower housings and designed to filter air flowing into the lower housing and out of the upper housing; and

a fan assembly inside the lower housing and designed to draw air into the lower housing and to force air out through the upper housing.

2. The system of claim 1, wherein the upper housing is square shaped, includes a flat upper surface with rounded edges and corners, and includes sloped side surfaces extending down from the upper surface.

3. The system of claim 1, wherein the upper housing is sized so that it is larger in length and width than the lower housing and portions of the upper housing overhang the lower housing when the upper and lower housings are connected together.
4. The system of claim 1, wherein the upper housing includes an upper air channel designed to channel air out of the upper housing.
5. The system of claim 1, wherein the lower housing includes a series of ridges and an upper lip extending outward from its sides.
6. The system of claim 1, wherein the lower housing includes at least one air intake opening defined in an upper surface of the lower housing, a lower air channel designed to channel air out of the lower housing, a fan cavity designed to receive the fan assembly, and at least one wiring channel defined in the upper surface of the lower housing.
7. A outdoor fan system, comprising:
 - an upper housing designed to be connected to a plurality of camouflaging lids;

a lower housing removably connected to the lower housing and designed to be inserted into the ground;

a filter assembly connected between the upper and lower housings and designed to filter air flowing into the lower housing and out of the upper housing, the filter assembly including a filter plate having at least one lower filter section for filtering air passing into to the lower housing and at least one upper filter section for filtering air passing out of the upper housing, and

a fan assembly inside the lower housing and designed to draw air into the lower housing and to force air out through the upper housing.

8. The fan system of claim 7, wherein the filter plate is designed to prevent debris from being pulled into the lower housing through air intake openings in the lower housing.

9. The fan system of claim 7, wherein the filter plate is designed to channel air out of the lower housing.

10. The fan system of claim 7, wherein the filter plate includes a lower curved portion designed to channel air out of the lower housing.

11. The fan system of claim 7, further comprising a filter flap rotatably connected to the upper housing using a filter hinge and wherein the filter flap is designed to prevent debris and water from entering into the upper housing.

12. A outdoor fan system, comprising:

an upper housing designed to be connected to a lid;

a lower housing removably connected to the lower housing and designed to be inserted into the ground;

a filter assembly connected between the upper and lower housings and designed to filter air flowing into the lower housing and out of the upper housing, the filter assembly including a filter plate; and

a fan assembly inside the lower housing and designed to draw air into the lower housing and to force air out of the upper housing, the fan assembly including a motor having a motor shaft, a motor clamp connected to the lower housing and designed to secure the motor to the lower housing , a cylindrical fan connected to the motor shaft

and designed to draw air into the lower housing and to force air out of the lower housing, and a motor support connected inside the lower housing and rotatably connected to the motor shaft, the motor support designed to provide support for the motor shaft.

13. The fan system of claim 12, further comprising at least one housing connector for connecting the upper and lower housings together, the housing connector including at least one connector pin.

14. The fan system of claim 12, wherein the upper housing includes:

an indented lower surface forming an upper housing lip;
an upper motor support extending outward from the indented lower surface;
an upper housing curved portion defined in the upper housing and including a triangular portion extending outward from the indented lower surface, the upper housing curved portion designed to channel air out of the upper housing; and
upper housing side walls forming the upper housing curved portion.

15. The fan system of claim 14, wherein the upper motor support is designed to form a motor cavity air inlet around the motor when the upper and lower housings are connected together.

16. The fan system of claim 14, wherein the indented lower surface includes at least one upper housing connector opening for receiving a connector pin and holding the upper housing in place with respect to the lower housing.

17. The fan system of claim 12, wherein the lower housing includes:

a lower housing curved portion designed to channel air out of the lower housing;

first and second lower housing side walls forming the lower housing curved portion;

a lower housing lip designed to provide support for the filter plate and formed by the lower housing curved portion;

a motor support opening defined in the first lower housing side wall and designed to receive the motor support; and

a lower housing motor support defined in the second lower housing side wall and designed to provide support for the motor and the motor clamp.

18. The fan system of claim 12, wherein the motor clamp includes:

a curved clamp portion designed to partially encircle the motor; and
at least one clamp flange designed to be used to secure the motor inside the lower housing.

19. The fan system of claim 12, wherein the upper and lower housings are connected together so that they form housing openings that allow air to flow between the upper and lower housings and into the lower housing.